

# AUTOMOTIVE INDUSTRIES

## INDEX TO VOLUME 66

January 2 to June 25, 1932

*To facilitate reference this index to Volume 66 has been divided into three parts: an index to subjects, to companies, and to authors, arranged in the order named in the following pages. Thus the three common methods used in seeking any particular article have been segregated to avoid the confusion which their intermingling permits.*



# AUTOMOTIVE INDUSTRIES

## Editorial Index to Volume 66

Issues of January 2 to June 25, 1932, Inclusive

### Subject Index—Below Company Index—Page 8

Date	Pages
Jan. 2	1-38
Jan. 9	39-76
Jan. 16	77-110
Jan. 23	111-144
Jan. 30	145-178
Feb. 6	179-212
Feb. 13	213-246
Feb. 20	247-280
Feb. 27	281-374

### Associations' Index— Page 12

Date	Pages
March 5	375-408
March 12	409-442
March 19	443-476
March 26	477-508
April 2	509-542
April 9	543-576
April 16	577-610
April 23	611-644

### Authors' Index— Page 12

Date	Pages
April 30	645-678
May 7	679-710
May 14	711-740
May 21	741-774
May 28	775-806
June 4	807-838
June 11	839-870
June 18	871-902
June 25	903-934

## Index of SUBJECTS Discussed in Automotive Industries

A	
Accessories, Vehicle—See Parts; Aircraft Parts & Accessories	
Adds air-horn line	435
Bosch automobile radio	212
Clock combined with rear-view mirror	508
Depressible foot rest	676
Dimmer—Invents automatic headlight dimmer	766
Hoist and capstan designed for trucks	435
Offers new luggage carriers	470
Oil and fuel filters	406
P-O-L primer	246
Radios—Car makers approve radios, providing for antennas	812
Advertising	
Advertising—Radio advertising of motors gains	703
Advertising up 1.2% in April	827
Aids "Buy New Car" appeal	706
Automotive ads cost \$35,000,000	832
Automotive advertising lineage losses cut	831
Automotive advertising shows slight loss	403
Automotive lineage in dailies jumps	173
Dodge campaigning	668
February shows advertising gain	538
Indian plans campaign	634
Magazine lineage drop 34.8 per cent	203
Offers \$25,000 for 50 words	830
Radio advertising holds up well	32
Aviation	
Air passengers show 31 per cent gain	703
Airplanes of the world, specifications	356
Airport census shows increase	137
Airways cuts fares	404
Boeing completes contract	601
British airports counted	504
Century lines get big slice of air traffic	471
Curtiss-Wright enters Turkey	236
Exports—April aero exports	863
Gets autogiro license	207
Montreal Aircraft buys Curtiss-Reid	863
New craft designed for national air show	399
New Stinson ready June 1	639
Outboard reports loss	72
Scheduled transport operations of American air lines, 1926-31	292
B	
Stratosphere, Flying in the	250
Townend licenses available for U. S.	500
Value of aircraft and engines sold in 1931	204
Aircraft Engines	
Airplane engine specifications	364
Aviation Diesel engine Co.'s engine	630
Connecting rods of Farina radial are of equal length	845
Continental aero engine	630
Engine—Schiltha two-cycle engine develops 36 hp. at 3200 r.p.m.	887
German Research Institute of Aviation makes engine report	240
Head resistance is decreased in Pratt & Whitney Twin Wasp	814
New P & W engines	606
U. S. airplane engine production 1926-31	292
Aircraft Descriptions	
Curtiss-Wright adds plane	435
Kellett detachable hood for autogiro	253
Kinner R-5 engine	273
United plans big planes	795
Aircraft Parts & Accessories	
Evans pump for auxiliary hydraulic mechanisms	158
Offers vacuum pump	134
Axles	
American stock rear axle specifications	350
American stock front axle specifications	354
Salisbury new rear axle	233
Bearings	
Bantam roller bearings for generators	644
PV factor is NOT proper measure of bearing capacity	842
Standard ball bearing oil retainer	596
Bodies	
Chassis—Leon Laisne chassis	860
Cowl elimination probable	224
Deep-Drawing at Budd Plant	22
Flat fabrics for upholstery	156
Murray composite bodies on Lincoln	259
Panel stamping—Budd stamps whole Rockne side panel from single sheet	860
Book Reviews	
Aero Directory published	603
Aircraft Engines	616
Automobiltechnisches Handbuch—Richard M. Bussien, editor-in-chief; Publisher M. Kryyan, Technischer Verlag, Berlin W	165
Diesel Engines	616
English-French dictionary	651
English-Spanish Automotive Dictionary, by Maximilian Aviles; Business Publishers International Corp., New York	165
Farm Tractors by Archie A. Stone, Published by John Wiley & Sons, Inc., New York	674
The Gasoline Automobile by Ben G. Elliott & Earl E. Consoliver. Published by McGraw-Hill Book Co., Inc., N. Y.	616
Handbook of Business Administration, by W. J. Donald, editor-in-chief, McGraw-Hill Book Co.	165
The High-Speed Internal Combustion Engine, by Harry R. Ricardo; D. Van Nostrand Co., N. Y.	165
The Influence of Drill Holes on the Endurance Limit of Steel Rods, by Dr. Ing. G. Barner; V D I Verlag, Berlin, Germany. Publisher	165
Man and Technics, by Oswald Spengler; published by Alfred A. Knopf, N. Y.	383
Market data published	606
Publications received	242
Publications received	605
Riedl's engine handbook is now in second edition	825
Springs research	876
Springs Research committee report	920
Standards Year Book for 1932	793
Technical dictionary has new edition	638
Thermal Power: Brennan Engine: Handbook	878
Trader handbook out	30

## INDEX—AUTOMOTIVE INDUSTRIES

## Brakes

Brakes—Atmospheric pressure operates	870
Miller brakes	870
Brakes—Warner electric brakes mounted on tractor-trailer train	883
Brake system—New B-K brake system designed for heavy vehicles	866
Centrifuse brake drums	90
Kelsey fused, weldless brake drum	194
Cadillac and La Salle—silent power utilization	10
Chrysler adds line using floating power	58
Citroen and the rising generation	28
Continental passenger car specifications	314
De Soto Six	16
De Soto adds coupe	634
Dodge four-cylinder	492
Dodge six and eight	60
Durant for 1932	122
Fiat "Balilla" gets good Italian reception	882
Fiat's Balilla is Italian company's smallest auto	777
Five Nash lines list from \$777	367
Ford announces "midget" in England	202
Ford 65 hp. V-8	512
Ford V-8	546
Four-wheel-drive racing car for difficult runs	691
Franklin gains 7 hp.	86
Franklin V-12	127
Franklin 12-cylinder car	558
Graham designs six; similar to eight	884
Greylock eagle brake lining	408
Hudson and Essex	46
Hupp	2
Lincoln continues eight	85
Marmon 8-125	88
Martin rear-engined car	256
Nash Models	380
New De Vaux shown	135
Olds six and eight	6
Packard twin-six and light eight	54
Plymouth transmission improvements	516
Pontiacs, two carry on for 1932—dropped	62
Power increase—Supercharged Duesenberg shows 20%	729
Reo offers semi-automatic clutch	123
Reo 6-cyl. Flying Cloud	588
Studebaker truck	20
Stutz prepares 1933 line	834
Stutz prices reduced on 3 lines	19
Wilkov at Prague show streamlined cars	428
Willys prices higher on much revised cars	917
Willys, three lines listed under \$900	50
Machine for laboratory tests of brake linings	120
Russell molded lining	127
Tru-stop emergency brake	388

## Buses

American gasoline motor bus chassis specifications	318
American bus body specifications	320
British motor bus chassis specifications	322
Continental bus chassis specifications	323
Flexible intercity coach	737
India, motor buses in	124

## Business Conditions

Business is better	443
Calendar is our best friend, The	1
Car prices shimmy	543
Chicago crowd below N. Y. mark	208
Fear hazard is lessened	402
Holds conditions better in England	370
Lycoming orders up	69
Machine Tool Makers as consultants to the industry	409
Michigan sales point to gain in rural sections	599
One dealer—multiple lines; that's how tide runs now	679
Parts index tops November	174
Progress is ahead, banish gloom	611
Railroad plans wider truck use	133
Rail rate cut allowed to meet truck push	134
Second-half headaches	871
Steel—Strip steel orders show improvement	704
The little giant	775
World replacement needs	392

## C

## Car Descriptions

Adler—Two new cars	801
American passenger car chassis specifications	304
American taxicab specifications	307
Auburn 8's and 12's	42
Austin exhibits new sedan	104
British Austin has 93 in. wheelbase	668
British 8-hp. Ford	778
British passenger car chassis specifications	312

## Carburetors

Bosch combines Diesel governor and fuel pump	875
Stromberg automatic choke	265

## Contests

Carey, Bob, wins Detroit race	860
Contest board elected	101
Kaye Don set for marine mark	800
500-mile record pushed up again	571
Hupp entered at Indianapolis	606
Indpls. race—Let engineering rule the roars	339
Long-speed marks climb in France	505
Nuvolari wins Italian grand prix	898
Power boat racing charges sifted	634
Qualifying run for Indianapolis 500-mile grind upped 100 m.p.h.	700
Qualifying speeds at Indianapolis race—Wins Roby race	800
Roars 254 m.p.h. to new record	367
Roby event sanctioned	604
"Stock" cars expected to push fast field in Indpls. race	746
"Stock" cars grab brilliant places at Indpls.	816
World's record beaten in England	271

## Cooling Systems

Evans water pump	608
Rushmore steam-cooling system	587

## Corporate Changes

Absorbs its subsidiaries	567
Allis buys Ryan Mfg. Co.	130
Armstrong Spring absorbed by Buick	761
Aviation Corp. buys Century	562
Bentley joins Rolls-Royce	734
Bentley may go	131
Continental buys the Vaux-Hall name	270
Corben plant moved	704
Curtiss to operate plant in Turkey	701
Czech merger dissolved	668
E. A. Purchases Best	105
Essex Wire buys the N. Y. Insulated Wire Co.	369
Evans buys patents	133
Freeman reorganized	601
G. M. Southeastern Sales Co. merged	603
Gunite consolidates two	276
Hayes and Sonora merged in Canada	237
Holding company for Schwarz	465
Indiana sells Marion plant	135
Lumen buys Buffalo Bronze	468
Montreal Aircraft buys Curtiss-Reid	863
Packard electric sale	562
Railroads buy Iowa Pickwick	276
Stoughton Co. reorganized	765
Triplex considers sale	27
Triplex sale approved	134
Unit Corp. to reorganize	402

## Corporations—New—See also Corporation Changes

B. O. P. Sales Co. organization set	531
Fords V-8 and Model B	582
G. M. organizes company in South	25
Johnson firm incorporates	274
Kades organization files	435
Papers filed for Continental-De Vaux	437
Simms organizes Canadian company	271
U. S. Rubber forms company	504

## Chassis

Car design, developments in	80
-----------------------------	----

## D

## Dealers—See also Marketing Descriptions—See Car, Truck, Airplane &amp; Engine Descriptions

Sales outlets and population by states	297
World distribution of automotive sales outlets	295

## Design—General Trends

Calculation of weight transfer on tractor-trailer trains	852
Citroen production shows sway of U. S. tool designing, etc.	714
Cowl elimination probable	224
Design—Tomorrow's truck and bus design	692
Flexible engine mountings	184
Gear design—Strength increased when gears are designed, etc.	744
Passenger car, engine power increase in	229
Per cent of car production by types	289
Trend toward closed cars, 1921-31	289
Vapor lock on 1932 cars, provisions against	216

## Diesel Engines

Buda marine Diesel	389
Clause Diesel engine	223
Diesel development reported in Italy	810
Diesel—French Diesel operator shows 8 to 15% savings	918
Diesel motivates 14-day test	71
Diesel myths	577
Diesels reverse knocking behavior of carbureted engines	848
Diesels should be designed and evaluated for specific problems, automotive	619
Diesel—Shows new Diesel	861
Diesels with precombustion chamber	662

High speed Diesel and heavy oil engine specifications	348
Lanova Diesel engine	126
Pump characteristics affect Diesel engine torque	780
Waukesha 6-cyl. Diesel	125

## E

## Electrical Equipment—Automotive—See also Parts and Accessories

Abell starter-drive	163
Bosch Ignition magneto	280
Canadian Sangamo production begun	275

## Electroplating

Chromium plating cutting tools multiplies wear-life	748
---	-----

## Employment

Auburn adds workers	895
Chevrolet transmission plant is active	766
Chicago Ford resumes	602
Employment rises in Michigan	895
Employment up in Michigan	271
Ethyl on 5-day week	924
Favors 6-hour day for workers	404
Ford Chicago plant employing 2500	831
Ford Milwaukee plant near peak	894
L. G. S. on 24-hr. schedule	27
Lincoln schedules up	102
Michigan employment up	134
Michigan employment off	638
Offers technical employment service	640
Olds employment up	27
Rubber companies busy in Akron	895
A. O. Smith payrolls up	203
Studebaker employs 9000	30
U. S. Tire on five-day week	699

## Engines—See also Diesel Engines &amp; Aircraft Engines

Adopts new engine	30
American passenger car engine specifications	308
American passenger car engine trends	311
American stock engine specifications	340
Builds large power unit	29
Engine trends	346
Experimental torque-converting engine manufactured in England	784
Flexible engine mountings	184
Flexible engine mountings	184
Pratt & Whitney adapts fuel-injection to Hornet engine	696
Hercules heavy-duty engines	459
Lycoming adds engine	471
Lycoming 8-cyl. truck engine	463
Passenger car, engine power increase in	229
Schwarz-cycle engine	121
Streamline design, opposed engine fits	455
Waukesha introduces new engine series	929

## Exports—See also Foreign Trade

American motor trucks, buses and chassis exports	301
American passenger car and chassis exports by classes and countries	299
Exports of American automotive products during 1931	298
Leading automotive export markets	302
Total foreign consumption of motor vehicles of U. S. design, 1914-31	298
U. S. exports of parts and accessories by classes and countries	303

## F

## Financial News

Ainsworth declares 50c special dividend	369
Ainsworth reports assets	500
Ainsworth reports loss	672
Ainsworth reports loss	738
Allied Motor has loss	669
Allied Products reports loss	535
Allis reports profit	236
Aluminum Industries profit	471
Asks for dissolution	367
Asks receivership	374
Asks receiver for Rolls-Royce	69
Auburn declares	859
Auburn declares dividend	432
Auburn lists more shares	30
Auburn profit slumps	600
Auburn profits triple in 1931	138
Autocar quick assets up	400
Auto-Lite declares	894
Auto-Lite reports profit	433
Auto-Lite reports profit	672
Automotive profits dropped in 1931	431
Backstay Welt profits	602
Bastian dividend deferred	500
Battery makers report profit	435
Bendix earnings show increase	436
Bendix earns \$26,364 in quarter	862
Bendix meeting postponed	168
Bendix passes dividend; plans to purchase stock	800
Bendix profit increases	505
Bendix reduces dividend basis	401
Bohn reports loss	634
Bohn reports profit	438
Borg & Beck shows gain	136

Borg-Warner net reaches \$1,208,209	466	Peerless reports loss	208	Minerva may leave U. K.	173
Borg-Warner profits	434	Peerless reports loss	604	Monthly estimates of foreign motor	240
Borg-Warner profits	669	P-A reports loss	432	vehicle stocks	600
Bower bearing reports profit	312	Plane production drops 2% in Jan.-Feb.	633	Monthly estimates of motor vehicle	134
Briggs outstanding reduced	27	Raybestos reports income	499	stocks	271
Briggs reports loss	734	Receivers named for DeVaux-Hall	235	Opel Works exports heavily	174
Briggs & Stratton earnings	732	Reduces share value	472	Petroleum imports up	134
British Star Co. fails	433	Reo reports loss	568	Peruvian market shows little encour-	801
British Willys has loss	569	Reo reports loss	701	agement, etc.	602
Bucyrus-Erie income is less	400	Rolls-Royce receivership denied	370	Plans Canadian plant	241
Budd companies lose	770	Rolls-Royce has 1931 net profit	570	Reo turns Canadian mfg. and sales over	168
Budd Mfg. reports loss	242	Ross reports profit	242	to Dominion Motors	275
Budd Wheel profits	276	Russell Motor declares	72	Rockne may enter U. K.	241
Buhl stockholders file petition	895	Sabca reports loss	828	Saxony bids for big share of German	168
Buick position gains	242	Seagrave reports loss	670	car production	275
Canadian financing off	923	Sterling reports loss	170	Steindraulic brakes have European out-	271
Caterpillar reports loss	635	Stewart-Warner	172	Studebaker exports up	437
Caterpillar reports profit	205	Stewart-Warner has loss	732	Swedish company formed	470
Caterpillar reports profit	801	Stewart-Warner reports loss	270	Tariff—Excessive barriers hinder trade	763
Checker reports profit	570	Studebaker earns 20c per share	438	Urge "retiation" in foreign trade	499
Chevrolet gains	700	Studebaker omits common dividend	667	Walter organizes Canadian company	130
Chicago cab profits	830	Thermoid loss is less	735		
Chrysler earns 33c, gain of 28c	269	Timken axle reports	669		
Columbus Auto has loss	634	Tire companies report	503		
Continental reports loss	67	Trico earns \$4.70	374		
Cord income 26c a share	207	Twin Coach reports profit	502		
Court names receiver	240	United Aircraft has profit	502		
Curtiss-Wright reports loss	535	United Air has profit	732		
Defiance progresses	133	Vauxhall reports profit	570		
Dunlop profits maintained	733	Vauxhall shows profit	604		
Durant gets receiver	167	Warner Aircraft loss	535		
Durant of N. J. faces receiver	564	White Security declares	701		
Durant N. J. plant in receivership	667	Wilcox-Rich net is down	401		
Eaton reports profit	635	Willys may get control	465		
Evans reports loss	374	Willys reports loss	436		
Ex-Cell-O profit is \$43,786	702	Worthington reports loss	430		
Ex-Cell-O reports loss	372	L. A. Young reports net	701		
Fairbanks reports loss	469	L. A. Young reports profit	436		
Federal-Mogul losses	438				
Federal omits dividend	372				
Federal reports loss	503				
Federal screw reports loss	368				
Firestone pays on preferred	734				
Firestone reports profit	30				
Fluctuation of automotive securities	134				
Foote-Burt profits	738				
Ford loss for '31 at 53 million	802				
Ford of Canada surplus declines	639				
Four car makers still continue dividends	711				
G. M. dividend cut to 25 cents	699				
General Motors Corp. summary of consolidated income	798				
General Motors dividend is cut	201				
GMC earns 17 cents in quarter	671				
G. M. holders increase	431				
General Parts shows loss	603				
General Tire passes common dividend	669				
German Ford omits dividend	271				
G. M. holdings of cash increase	167				
Goerlich business up	766				
Goodyear of Canada earns \$8.20, common	272				
Goodyear reports profit	236				
Graham reports loss	437				
Graham reports profit	633				
Hall Lamp loss reduced	271				
Hayes Body Co. reports loss	398				
Hayes of Canada control passes	668				
Heavy charges boost loss to \$14,000,000	469				
Houdaille-Hershey loss	702				
Hudson reports loss	270				
Hupp reports loss	465				
Hupp reports loss	667				
Indian motorcycle cuts 1930 loss	275				
I.H.C. declares dividend	669				
Johnson assets reported	202				
Kari-Keen, Irving pay	892				
Kelsey-Hayes reports loss	538				
Kissel plant to be used	27				
Libbey-Owens reports loss	502				
Libbey reports profit	601				
Loss is shown by General Tire	398				
Lycoming reports income	499				
McCord exchange approved	136				
McCord reports loss	438				
McCord to exchange	25				
McQuay profits up	472				
Mack declares dividend	434				
Mack Trucks declares 25c quarterly dividend	863				
Marlin Rockwell reports loss	436				
Marmon to list additional stock	895				
Massey-Harris aids its creditors, cuts prices	635				
Modine dividend cut	602				
Moline anticipates loss	135				
Motor Products loss	435				
Motor Products reports loss	671				
Motor securities decline	568				
Motor stocks decline	829				
Motor Wheel conserves cash, omits dividend	272				
Motor Wheel reports loss	796				
Muncie reports loss	133				
Murray holders to vote	893				
Nash earns 7 cts. per share	603				
Nash reports orders gain	500				
National Supply reports loss	502				
Noblitt passes dividend	437				
Packard holders to vote	569				
Packard reports loss	531				
Packard reports loss for quarter	702				
Packard transfer approved	633				
Parker reports profit	668				
Peerless reports loss	31	1918-1931	298		

Minerva may leave U. K. .... 173

Monthly estimates of foreign motor vehicle stocks .... 240

Monthly estimates of motor vehicle stocks .... 600

Opel Works exports heavily .... 174

Petroleum imports up .... 134

Peruvian market shows little encouragement, etc. .... 801

Plans Canadian plant .... 602

Reo turns Canadian mfg. and sales over to Dominion Motors .... 241

Rockne may enter U. K. .... 168

Saxony bids for big share of German car production .... 275

Steindraulic brakes have European outlet .... 271

Studebaker exports up .... 437

Swedish company formed .... 470

Tariff—Excessive barriers hinder trade .... 763

Urge "retiation" in foreign trade .... 499

Walter organizes Canadian company .... 130

**Fuels**

Develops vapor "unlock" .... 133

Diesel fuels, more about .... 160

Fuel—Demand for fuel expected to decline .... 860

Fuel synthesis studied .... 174

Gasoline consumption by states, 1931 .... 291

Gasoline consumption by states .... 834

Gasoline consumption in October, 1931 .... 70

Gasoline consumption by states, January, 1932 .... 638

Gasoline—Cost of producing synthetic gasoline .... 916

Gasolines are colored for identification and sales .... 887

Gasoline use in Canada off in spark-ignition engs. .... 29

Knocking—Confirms cause of knocking in spark-ignition engs. .... 720

November gasoline consumption .... 203

Petroleum imports up .... 134

Petroleum imports reported .... 205

Petroleum imports up .... 207

Petroleum imports up .... 472

Preheating Diesel fuel .... 159

Pump characteristics affect Diesel engine torque .... 780

Size of injected fuel particles .... 236

Surveying fuel sales .... 26

Tests spontaneous combustion of Diesel engine fuels .... 791

**G****Gears—See also transmissions**

American stock gearset specifications .... 352

Celeron develops spoke-type gear .... 723

Phenolic laminated gears .... 624

**Government Agencies**

Over a billion available for roads .... 500

Surveying fuel sales .... 26

World replacement needs .... 392

**Instruments**

Acro-lite gage .... 442

Chassis dynamometer installed .... 634

Dynamometer—Toledo torque .... 710

Gage for connecting rods .... 278

Luikin announces "Crescent Junior" .... 440

Miholland Brinell test .... 772

Olsen hydraulic type testing machine .... 210

P. &amp; W. Electrolimit gage for "continuous inspection" .... 440

Radiograph—Aircro .... 804

Scale—The new Kron scale .... 768

Signal—Thermo-Tel electric temperature signal .... 902

Steel City testing machine .... 900

Tester—Timken wear and lubricant tester .... 740

Vibration records of machine tools .... 395

Vibrometer—Davey .... 768

Zeiss universal gear testing machine .... 476

**Insurance—See also Financing, Marketing, Legislation**

G. M. insurance reports gains .... 399

**J****Junking**

Estimated number of U. S. passenger cars scrapped .... 287

Factories junk one-ninth of cars scrapped, 1931 .... 287

**L****Legislation**

Assign tax hearing date .... 105

Carriers—Curb unlikely at present .... 736

Car tax snare drawn tighter .... 581

Cousens bill hearings planned .... 306

Cousens hearing ended .... 606

Excise-tax overload, shun the .... 111

## INDEX—AUTOMOTIVE INDUSTRIES

Excise taxes protested to Senate ..... 636  
 Federal control of trucks hit ..... 391  
 Flynn recommendations opposed ..... 207  
 E. G. Grace flays proposed taxation ..... 172  
 Graham to push tax opposition ..... 601  
 Hearings begin on Couzens bill ..... 201  
 Hearing date set ..... 562  
 Hearing date set ..... 606  
 Highway bill withdrawn ..... 923  
 Huge tax savings to motorists seen ..... 394  
 Industry girds for final tax fight ..... 561  
 Industry wins first excise-tax skirmish ..... 168  
 Kittredge dies; headed Peerless ..... 533  
 Legislators busy on restrictions ..... 398  
 M. E. A. protests tax ..... 134  
 Mellon presents his tax program ..... 161  
 Motor restriction as railroad aid, A. P. I. hits ..... 266  
 Move to strike excise-tax fails ..... 667  
 Moves to restrict rail "service" ..... 923  
 New Jersey gives reciprocity ..... 635  
 New taxes on motor vehicles proposed in various states ..... 257  
 New bills menace truck operations ..... 129  
 New York plans taxes ..... 205  
 Present Congress may consider regulation of carriers ..... 640  
 Protests report favoring tax ..... 499  
 Rates—Triple muddle stalls truck raters ..... 913  
 Regulation bill read in Kentucky ..... 136  
 Saskatchewan farmers to pay 2¢ gas tax ..... 135  
 Seek car license reduction ..... 136  
 Senate indifferent to Couzens Bills ..... 467  
 State gas-tax tolls mount ..... 645  
 Studying Johnson bill ..... 206  
 Tariff flexibility sought in bill ..... 68  
 Tax—Hoover signs bill amending tax ..... 891  
 Tax legislation—Topsy-turvy tax legislation hits industry ..... 741  
 Tax presentation program set ..... 599  
 Tennessee tax fifth of revenue ..... 136  
 Treasury explains how taxes fall ..... 923  
 Trucks need national legislation ..... 831  
 Truck users lay legislative plan ..... 928  
 Virginia code revised ..... 635

## Lubrication

Dirkes lubricating system ..... 176  
 Free-wheeling lubricants ..... 214  
 Grease—Finds soluble greases clog radiators ..... 921  
 Pressure—How much pressure is too much when lubricants wilt? ..... 752

## Litigation

Adams-Alemite suit settled ..... 734  
 Dayton-Allis suit settled ..... 504  
 Free-wheeling use upheld in court ..... 571  
 Speeds lacquer suit ..... 633  
 Sues Moon officers ..... 438  
 Takes carriers case ..... 167  
 Wisconsin law upheld ..... 472

## M

## Machine Tools—See also Shop Equipment, Production Methods

All-steel straight-sided press ..... 608  
 Axle turning with Fay lathe ..... 556  
 Barnes automatic lathe ..... 38  
 Barnes No. 194 hydraulic honing machine ..... 838  
 Bevel gear rounding machine ..... 576  
 B & S high speed milling machines ..... 576  
 Bullard Multi-a-matic center lathes ..... 176  
 Bullard type C multi-a-matic ..... 212  
 Cincinnati No. 1 vertical miller ..... 476  
 Drill—National vertical hydraulic drill ..... 934  
 Ex-Cell-O precision boring machine improved ..... 895  
 Fellows worm-type thread generator ..... 244  
 "Fitchburg" milling machines ..... 506  
 Footburn broaching machines ..... 36  
 Drilling machine—Footburn 5-way ..... 900  
 Gleason spiral bevel gear rougher ..... 178  
 Gleason spiral bevel pinion burnisher ..... 178  
 Greenlee multiple drilling set-up ..... 408  
 Grinder—Hammond high-speed ..... 932  
 Grinder—Norton grinder series ..... 934  
 Hammond polishing and buffing machine ..... 244  
 Hammond polishing and buffing lathe ..... 506  
 Header—National automatic electric header ..... 836  
 Heavy duty hydraulic vertical grinder ..... 442  
 Henry & Wright presses ..... 393  
 Hisey Texdrive grinder ..... 176  
 Hisey wide swing floor grinders ..... 38  
 "K" Lo-swing lathe ..... 408  
 Knee type milling machines ..... 676  
 Landis tool and cutter grinder ..... 176  
 Langeller forming machine ..... 838  
 Langeller swaging machine with hydraulic feed ..... 934  
 Lathe—Rockford economy lathe ..... 934  
 Lathe—Ultra Hi-Speed production ..... 710  
 Lucas 40 series boring, drilling and milling machine ..... 574  
 Michigan gear finishing machine ..... 642  
 Milburn type HMS welding torch ..... 608  
 Milwaukee-Mil rotary-type miller ..... 772  
 Natco hydraulic driller ..... 210  
 New Cincinnati 4-position turret stop ..... 644  
 New Rockford automatic ..... 278

New type 40 lapping machine ..... 36  
 Oilgear cyclematic vertical broaching machine ..... 140  
 Polishing and buffing machine ..... 178  
 Press brake, new type ..... 804  
 Production hobbing machine ..... 765  
 Shapers—Gould & Eberhardt industrial shapers ..... 710  
 Six spindle bar and chucking machines ..... 474  
 Spine shaft hobbing machine ..... 774  
 Sunstrand brake drum splitting machine ..... 280  
 Sunstrand Junior stub lathe ..... 678  
 10 in. x 24 in. Landis Universal grinder ..... 440  
 Two machines for clutch plates ..... 406  
 Vertical spindle milling machine ..... 676  
 Warner & Swasey No. 3 universal turret lathe, new ..... 139

## Management

Foremen in factories is an expensive pastime, firing ..... 622  
 G. M. savings plans suspended ..... 767  
 McCarty heads Nash executive group ..... 414  
 Norton wage plan ..... 190  
 S.K.F. budget control ..... 648

## Marketing—See also Foreign Trade

"Backward" engineering might solve 1932 sales riddle ..... 806  
 Buick-Olds-Pontiac Sales Co. ..... 612  
 Chevrolet launches big sales push ..... 29  
 Dealers assisted by Graham ..... 213  
 Equipment sales rise in November ..... 30  
 General Motors sales reported ..... 105  
 G. M. sales drop in February ..... 437  
 G. M. sets up new sales co. ..... 167  
 Non-vehicle merchandising, S.P.A.R. units Studebaker's ..... 114  
 Sales drive launched ..... 561  
 Sales meetings for dealers ..... 509  
 Stinson lets \$2,500,000 in orders ..... 26  
 Studebaker—New sales unit ..... 761  
 Studebaker sets up bonus for salesmen ..... 173  
 31 states show sales off 34% ..... 404  
 Wayne Co. sales hopeful in tone ..... 436  
 White to sell an Indiana line ..... 207

## Meetings

Electrochemists discuss light metals plating, etc. ..... 658  
 Joint meeting on testing set ..... 437  
 Oil, gas power meeting planned ..... 606  
 S. A. E. annual meeting report ..... 179  
 S. A. E. standards committee report ..... 154

## Metallurgy

Carpenter patents steel ..... 72  
 Chromium finish, durable, bright ..... 481  
 Chromium plate, polishing ..... 161  
 Chromium plating on zinc alloys ..... 528  
 Chrome vanadium bar specifications revised ..... 227  
 Chrome—Vanadium ..... 555  
 Corrosion of radiators ..... 457  
 Cyaniding speeded in (Hydro furnaces) ..... 456  
 Dodge bodies are rust-proofed ..... 460  
 Doeher brass die castings ..... 142  
 Electroplating aluminum ..... 98  
 Nickel alloys and plating ..... 255  
 Nickel tubing resists fatigue ..... 164  
 Nitriding for small production ..... 390  
 Research solves poor machinability problems at Muncie Prod. Div. ..... 820  
 Rhodium plating process offered ..... 131  
 Robertson bonded metal ..... 654  
 Stainless steel polishing ..... 595

## Motor Boats

Another "Miss England" ..... 27  
 Census of numbered motor boats 1927-1931 ..... 292  
 Fuel system for motor boats ..... 508  
 Outboard motorized bicycle engine ..... 369  
 Outboard patents pooled ..... 137  
 Record year seen for boat racing ..... 465  
 Registered motor boats in U. S. show gain ..... 271  
 Show brings out cheaper, better boats. 171

## Motorcycles

British cycle production drops ..... 433  
 Cycle trades seek wider field ..... 135  
 Dispatch-tow prices down ..... 602  
 Indian plans new type ..... 68

## Obituaries

D'Arcy R. Baker, 565; J. F. Barr, 368; Charles F. Beckwith, 437; Charles N. Candee, 136; Charles Chalmers, 272; Hugh Chalmers, 865; John T. Clancy, 503; Hugh R. Corse, 401; Cady Durham, 734; Arthur D. Ferguson, 471; J. B. Flick, 436; William C. Gewalt, 602; Emil Hallman, 894; George H. Hannum, 670; Georges-Marie Haardt, 672; Aaron J. Helfrecht, 171; William B. Johnson, 171; Joseph Kerkhoff, 374; Herman M. Kinney, 535; Heinrich Kleyer, 866; F. F. Landis, 734; Henry M. Leland, 537; William D. Loomis, 467; H. L. McClaren, 894; Alfredo Maserati, 503; A. Kenneth Mayer, 436; Howard E.

Maynard, 770; Dr. James E. Mead, 635; Sam Miles, 665; William H. Mullins, 437; Joseph Oberberger, 839; John G. Osborne, 403; Charles Pfeiffer, 704; Noah C. Rogers, 205; Walter T. Sewell, 892; Arthur J. Stade, 50; E. A. Stinson, 171; Richard Stresau, 134; James D. Sutherland, 108; Lewis Leeds Tatum, 272; N. H. Van Sicklen, 928; Horace E. Whitney, 472; Alexander Winton, 911.

## P

## Parts Descriptions—See also Aircraft Parts

Aetna oil seal ..... 642  
 American-Bosch coil ..... 36  
 B-B lock nut ..... 932  
 Ball bearing universal joint ..... 483  
 Bendix flexible metal tubing ..... 197  
 Bohnalite cylinder heads ..... 246  
 Bracketite nuts ..... 838  
 Champion designs plug for wide range usage ..... 804  
 Clutch control—Hudson, Essex carry ..... 734  
 Bendix clutch control ..... 734  
 Coil, new heavy duty ..... 806  
 Coils—Offers replacement ..... 861  
 Cooper gasket material and cut gaskets ..... 139  
 Daiwa self-locking wheel nut ..... 506  
 Develops new fan for heaters ..... 861  
 Develops new fan belt ..... 437  
 Gear—New Gemmer gear for super-balloons ..... 902  
 G. M. savings fund matures ..... 205  
 Handy Governor ..... 610  
 Lock washer and cap ..... 900  
 Making new starter drive ..... 135  
 1932 passenger car body equipment specifications ..... 310  
 Pierce electro-vac engine governor ..... 221  
 Safety glass varies with central layer, quality of ..... 621  
 Spark—Mallory combines vacuum and speed control of spark ..... 885  
 Stromberg SF carburetor ..... 642  
 Titeflex all-metal fuel lines ..... 608  
 Titeflex all-metal exhaust tubing ..... 610  
 Trulay armored cable ..... 278

## Personal Notes

AAA Club elects Page ..... 830  
 A. C. C. elects Lawrence ..... 206  
 Allard sales head of Curtiss-Wright ..... 273  
 Allis-Chalmers elects ..... 738  
 Ames heads Duesenberg ..... 634  
 Audet rejoins Greenfield ..... 436  
 Autocar personnel shifted ..... 503  
 Baldwin Rubber elects Wilson and Young ..... 129  
 Baldwin and Bishop promoted by Pierce-Arrow ..... 237  
 Bendix elects Klesrath ..... 600  
 Berry now heads Udylite advertising ..... 399  
 Biju elects Kocher ..... 637  
 Blackhawk names Watson ..... 432  
 Bliss made Nash director ..... 273  
 Borg-Warner elects Blood ..... 562  
 Budd Wheel elects ..... 270  
 Budd names Ehle ..... 431  
 Budd names Harder ..... 859  
 Buick makes Churchill vice-president of sales ..... 32  
 Buick-Olds changes ..... 562  
 B.O.P. names Abbey ..... 706  
 Buick, Olds and Pontiac destinies ..... 501  
 Cadillac names Dreystadt, Houser ..... 667  
 Chrysler names Kaufmann ..... 892  
 City auto reelects ..... 639  
 C. I. T. Corp. names two ..... 505  
 Chevrolet personnel changes ..... 568  
 Chevrolet shifts two ..... 602  
 Continental names Keith ..... 466  
 Crockett selling equipment ..... 30  
 H. J. Cupper resigns ..... 602  
 Curtiss-Wright elects Damon ..... 563  
 De Soto appoints ..... 802  
 De Vaux appointments ..... 737  
 De Vaux names Miller ..... 706  
 De Vaux staff named ..... 535  
 Die-casting man in new company ..... 829  
 Dodge names Burke ..... 503  
 Dodge names two ..... 432  
 Dodge names two ..... 603  
 Eddins elected Olds president ..... 397  
 Federal names Mitchell ..... 635  
 Fisher, Boyd—resigns ..... 896  
 FWD names Bard ..... 202  
 FWD names Billings ..... 466  
 FWD names Gray ..... 132  
 Franklin companies elect ..... 202  
 Fuel motors names Noville ..... 563  
 G. M. Truck names Barth ..... 829  
 G. M. names Fisher ..... 599  
 G. M. Truck names Little ..... 569  
 Goodrich elects two ..... 601  
 Goodrich names Newman ..... 733  
 W. S. Graham leaves Hupp ..... 633  
 Col. Green advanced ..... 635  
 Harnischfeger elects Falk ..... 466  
 Harrison leaves Cincinnati firm ..... 733  
 Hayes reelects Hoagland ..... 533  
 Heads Pontiac parts, service ..... 434  
 Heads St. Louis Ryerson plant ..... 369  
 Hell elects Falk ..... 202  
 Heintz elects Meinel ..... 832  
 Herrington names Dingley ..... 563

Higginbottom joins De Soto ..... 237  
 Honors for Reeves and Pyke Johnson ..... 101  
 Horning sails for Europe ..... 766  
 Hudson-Essex cut in Canada ..... 861  
 Hudson elects Hood, Oostdyk ..... 802  
 Hutto names directors ..... 132  
 Harvey Firestone, Sr., takes the chair ..... 106  
 Institute elects Fowler ..... 533  
 Institute names Le Page ..... 568  
 I. H. C. elects ..... 930  
 Jahnke leaves Fairbanks ..... 132  
 James of Hudson is ABC director ..... 243  
 Jamieson leaves Graham ..... 634  
 Jay heads a. c. f. sales ..... 369  
 C. M. Keys retires ..... 133  
 Knoble on committee ..... 634  
 Henry Krohn resigns ..... 603  
 La Pierre succeeds Dreiske ..... 32  
 Lincoln Electric promotes ..... 237  
 Link-Belt elects Torrence ..... 503  
 Marvel elects two ..... 830  
 J. S. Marvin elected ..... 801  
 Sam Miles retires from show job ..... 561  
 Morgan leaves Goodyear ..... 799  
 Motor Wheel names Sanford ..... 733  
 Muehl succeeds Schwab ..... 30  
 Murray names Manser ..... 132  
 N.A.C.C. reelects Alvan Macauley ..... 892  
 Nash arrives at show announcing McCarty as president ..... 104  
 Nash names Moore as chief engineer ..... 129  
 National credit names Davidson ..... 70  
 N. S. P. A. names Schlieder ..... 31  
 Noorduyn joins Pitcairn ..... 273  
 Oakland names White ..... 202  
 Oakland personnel shifts ..... 105  
 Oakland personnel changes ..... 534  
 Pavloski and Rex shifted ..... 202  
 Peerless elects Davis ..... 431  
 Penry made Auburn director ..... 605  
 Perfex elects Tetzlaff ..... 532  
 Pulcher takes Federal sales ..... 733  
 Reeder is Cadillac advertising manager ..... 402  
 Reo elects Foster ..... 640  
 Reo names Parker ..... 93  
 Rickenbacker joins G.A.C. ..... 636  
 Rim Assn. elects Hale ..... 763  
 Ritter is appointed ..... 762  
 A. J. Rogers joins Dunn ..... 565  
 Russell heads Fargo rail sales ..... 735  
 Ryan on Gemmer board ..... 273  
 Searle becomes Worthington executive ..... 237  
 Searle leaves Allis ..... 29  
 Schwarz licenses Hunt ..... 700  
 J. P. Seiberling named ..... 131  
 Simpson joins M. E. M. A. ..... 241  
 Sloan and Teagle named to committee ..... 801  
 S.A.E. names W. D. John ..... 629  
 S. P. A. export promotes Spencer ..... 271  
 Sparta names Keller ..... 132  
 Sparton appoints Holmes ..... 639  
 Steel promoted ..... 273  
 Sterling personnel changed ..... 32  
 Stewart-Warner reelects ..... 602  
 Thien leaves G. M. export ..... 273  
 Tipper opens consulting office ..... 132  
 Triphagen rejoins Reo ..... 105  
 U. S. Rubber elects Mahoney ..... 633  
 Van Sicklen resigns ..... 436  
 Vested joins B & J ..... 800  
 Walker, Robert T. ..... 569  
 Walter Beech resigns ..... 466  
 F. A. Warren heads Canadian Co. ..... 400  
 White elects Dahl and Kelly ..... 704  
 Widman leaves Cadillac ..... 638  
 Wilcox names Voorhies ..... 766  
 Willys drops Warsaw post, returns to Toledo ..... 661  
 Willys is back ..... 615  
 Wilson with Santa Monica ..... 137

**Pistons**  
 Piston materials, Test of ..... 523  
 Pistons and materials, Tests on ..... 552

**Plant Expansion**  
 Contracts let on new Ford plant ..... 568  
 Franklin plans body output ..... 138  
 Seeks new plant site ..... 434

**Prices, Changes**  
 Auburn price announcements ..... 102  
 Auburn prices up ..... 531  
 Chrysler imperial prices are set ..... 205  
 Chrysler price announcements ..... 102  
 Continental-De Vaux reduces price on "80" ..... 700  
 De Soto prices set ..... 67  
 De Vaux prices up, new types added ..... 600  
 Essex "Standard" priced ..... 795  
 Ford prices in Canada ..... 564  
 Franklin price announcements ..... 102  
 Franklin prices set ..... 102  
 Graham prices up ..... 465  
 Hupp keeps 1931 lines ..... 26  
 Packard prices up ..... 893  
 Packard prices touch \$1,750 ..... 103  
 Pierce prices announced ..... 102  
 Prices cut in Auburn drive ..... 863  
 Stinson cuts price on 4-pass. type ..... 72  
 Pierce-Arrow prices revised upward ..... 600  
 Pontiac prices cut ..... 567  
 Prices of Ford Commercial chassis and motor trucks ..... 564  
 Studebaker truck reduced ..... 567  
 Willys prices reduced ..... 130  
 Willys prices to stick ..... 569

**Production, Aircraft**  
 Autogiro—Kellett solves autogiro structural problems, etc. ..... 808  
 U. S. Airplane production 1925-31 ..... 292  
 U. S. production and sales of airplanes by types, 1931 ..... 291

**Production, Vehicles—See also Business Conditions**  
 Facts and figures, preliminary ..... 39  
 Ford production begun on eights ..... 269  
 Revamped Ford four may precede announcement of eight ..... 129

**Production Methods—See also Welding, Cutting**  
 Body sheet metal production ..... 496  
 Bonderizing Ford steel parts ..... 592  
 Burgess realigns plant ..... 27  
 Cylinder block inspection at Graham-Paige ..... 657  
 Crankshaft operations at Hudson plant ..... 494  
 Dodge bodies are rust-proofed ..... 460  
 Double-duro case-hardening method ..... 394  
 Ductility and corrosion in welding up at A.W.S. meeting ..... 688  
 Electric-motor maintenance ..... 96  
 Greenlee multiple spindle machine, tooling for ..... 462  
 Inspection—Rigid inspection of tools & product assures accuracy in gear production ..... 632  
 Kelsey fused, weldless brake drum ..... 194  
 Kingsbury drilling and tapping machines ..... 262  
 Matrix alloy used for setting die parts ..... 920  
 Murray composite bodies on Lincoln ..... 259  
 Oven-length controls finishing-time in Ford plant ..... 726  
 Precision in boring required for silent operation ..... 444  
 Production—Seneca Falls makes new contribution to past production ..... 876  
 Rhythm found key to production economies through motion study ..... 914  
 Wheel alignment ..... 424  
 "X" frames six times stiffer, tests show ..... 846  
 X-Ray shows symmetry of sealed chamber valve ..... 690

**Production, Vehicles—Schedules & Statistics**  
 Auburn ships 2508 ..... 205  
 Bi-party coalition is forced to reduce car and truck taxes ..... 799  
 Buick produces 6350 ..... 272  
 Canadian output up ..... 667  
 Casing shipments increased in March. Census sets February production at 117,413 ..... 504  
 Chevrolet output up ..... 25  
 Chevrolet sales up ..... 634  
 Chrysler ships more ..... 67  
 Chrysler shows gain in 1931 ..... 398  
 December production ..... 67  
 December production estimated at 120,107 ..... 101  
 De Soto deliveries gain ..... 601  
 De Soto, Plymouth deliveries gain ..... 668  
 De Soto Shipments gain ..... 436  
 Dodge truck deliveries up ..... 533  
 February output put at 118,559 ..... 431  
 Ford output 72,000 in May in world plants ..... 863  
 Ford production ..... 795  
 G. M. boosts sales to 81,573 in April ..... 738  
 General Motors sales decline ..... 239  
 Graham-Paige builds 1143 ..... 700  
 Graham production up ..... 400  
 Graham production up ..... 503  
 Graham production up ..... 568  
 Graham ships 2537 ..... 205  
 Hupp production down ..... 700  
 Hupp ships 1049 ..... 204  
 Illinois car sales valued ..... 206  
 March vehicle output slightly above February ..... 671  
 May output estimated at 185,970 units ..... 863  
 Michigan sales off 31% for month ..... 404  
 Monthly motor vehicle production 1925-1931 ..... 288  
 Motor vehicle production ..... 287  
 Motor vehicle production—U. S. and Canada ..... 288  
 "Motors" sales up from February ..... 605  
 1931 car sales show 27 1/3% drop ..... 236  
 1931 output off 29.6 per cent ..... 170  
 November output down to 68,867 ..... 25  
 Output for April 146,584 units ..... 731  
 Packard ships 2145 ..... 599  
 Passenger car production by leading manufacturing groups 1927-31 ..... 288  
 Polk sees April sales at 111,000 ..... 796  
 Production drops 2% in January ..... 403  
 Wayne Co. sales stirred by news ..... 567  
 World car and truck production ..... 286

## R

## Rail Cars

Budd-Micheline rail car clips 55 m.p.h. ..... 372  
 Budd gets railcar rights ..... 69  
 Railcar is tried on British line ..... 402

**Registrations, Motor Vehicles—See also Aviation, Motor Boats, Motorcycles**  
 Dealer car registrations ..... 222  
 Facts and figures, preliminary ..... 39  
 Low-pressure tires ..... 231  
 Michigan registration above January mark ..... 469

Michigan registrations gain ..... 764  
 New-car domestic sales by makes ..... 293  
 New truck sales by makes ..... 296  
 1931 new passenger car and truck sales by states ..... 294  
 Registration of Automobiles in Mexico and Central America ..... 26  
 Registrations down 2.8% says bureau ..... 637  
 Summary of world registrations of motor vehicles ..... 282  
 Total vehicle registrations for 1931 ..... 71  
 U. S. motor vehicle registrations ..... 283, 284  
 Wayne registrations up ..... 170  
 World registrations ..... 285

## Roads

Over a billion available for roads ..... 500  
 Road builders show; MacDonald gets award ..... 103

## Rubber

Canadian rubber imports are off ..... 130  
 Carbon black output off ..... 131  
 Casing output up in February ..... 605  
 Casing shipments above December ..... 471  
 Crude rubber imports gain during December ..... 130  
 Crude rubber low again ..... 502  
 Firestone cuts prices to meet "mail orders" ..... 829  
 Gillette Rubber busy ..... 736  
 Goodyear making rail-car tires ..... 672  
 1931 tire output near 1930 mark ..... 236  
 1931 tire sales dropped ..... 438  
 Rubber companies busy in Akron ..... 895  
 Rubber consumption up ..... 893  
 Rubber imports up ..... 135  
 Rubber market conditions ..... 477  
 Rubber shipments steady ..... 168  
 Rubber shipments up ..... 206  
 Tire casing shipments ..... 105  
 Tire prices up as tax goes on ..... 925  
 Tire production by types 1925-31 ..... 290

## S

## Safety, Vehicle—See also Legislation

Safety prizes awarded ..... 71  
 Speed—Administrators ask legs talk of speed ..... 718  
 Suggested for safety in driving ..... 258

## Shop Equipment—See also Machine Tools

Adds new gear reduction unit ..... 506  
 Automatic 4000-lb. lift truck ..... 178  
 Barber-Colman bench center ..... 142  
 Cammen oil-temperature regulator ..... 836  
 "Climatool" grinding and boring chuck ..... 740  
 Clark tractor ..... 608  
 Collets and Shell end mill arbors ..... 740  
 DeVilbiss automatic spray equipment ..... 406  
 Enlarged line of compressors ..... 610  
 Floor anchoring device ..... 806  
 Heads for synthetic enamel finishing, new ..... 806  
 Heald No. 81 internal grinder ..... 708  
 Helical cutter sharpening machine ..... 708  
 Hicycle continuous belt sander ..... 139  
 Hannifin air-operated arbor presses ..... 768  
 Hannifin duplex valve ..... 774  
 Hannifin valve for remote control ..... 678  
 Improved gas-fired forge furnace ..... 474  
 Improved mercury-vapor lamp ..... 508  
 Landis 1 1/4 in. pipe and nipple threading machine ..... 574  
 Landis rotary die head ..... 708  
 Layth-Grindar attachment for lathes ..... 36  
 Leather belting sold by thickness ..... 597  
 Limit control for hot-air furnaces ..... 574  
 Lincoln "power saver" electrode holder stand ..... 836  
 Mathews conveyor uses own device ..... 644  
 New improved 3 finger automatic microtome hone ..... 246  
 New line of American furnaces ..... 140  
 New Purox regulators ..... 476  
 New solid shank expansion reamer ..... 246  
 New tornado blower ..... 576  
 New type workhead ..... 408  
 Oilgear sideplate vertical presses ..... 139  
 Owens-Illinois "Dustop" air filter ..... 142  
 Paasche type U B U multiplehead air brush ..... 140  
 Polisher—Excelsior straight line bumper polisher No. 29 ..... 902  
 Semi-automatic Bolender burnisher ..... 142  
 Stackbin machine tender ..... 574  
 Tester, Bearing—Gisholt designs fixture for testing bearings ..... 687  
 Vickers 4-way balanced valves ..... 576  
 Westinghouse gearmotor speed reducers ..... 610

## Shows

Aero show expects to surprise fans ..... 136  
 Aircraft show attendance ..... 571

## INDEX—AUTOMOTIVE INDUSTRIES

Air show attendance off . . . . .	600
Automotive units signed for Chicago . . . . .	736
Detroit gets joint M.E.M.A.-N.S.P.A. show . . . . .	401
4,888,800 saw G. M. spring show . . . . .	599
G. M. arranges its biggest exhibition . . . . .	505
G. M. to exhibit all its products . . . . .	467
Lansing plans show . . . . .	28
New York show . . . . .	77
Reeves visits Toronto show . . . . .	434
Show brings out cheaper, better boats . . . . .	171
Tool show date set . . . . .	25
Toronto will see new Ford March 5 . . . . .	236
Wilmington show is held success . . . . .	401
<b>Spark Plugs—See also Parts</b>	
Champion shielded aircraft spark plug . . . . .	644
Crofile has low coefficient of expansion . . . . .	631
Mixture distribution and spark plug temperature . . . . .	450
Mixture distribution studied (Part 2) . . . . .	486
<b>Standardization</b>	
Bearing friction loss . . . . .	614
Lock washer standards proposed for approval . . . . .	133
Maintenance practice, standards for . . . . .	150
Petroleum products and lubricants, methods of test . . . . .	232
S.A.E. revises standards set-up . . . . .	928
S.A.E. standards committee report . . . . .	154
S.A.E. truck rating solution is due . . . . .	855
Standardization is needed for cutting tool materials . . . . .	785
Truck rating, why fleet men ignore . . . . .	159
<b>Statistics</b>	
Statistical issue . . . . .	281-274
<b>Steering</b>	
American stock steering gear specifications . . . . .	353
<b>T</b>	
<b>Taxes, Revenue from</b>	
Gas tax rise looms, report . . . . .	797
How motor vehicles contributed to taxes, 1919 to 1931 . . . . .	168
<b>Testing—See Production Methods</b>	
How much pressure is too much when lubricants wilt . . . . .	752
<b>Tools, Portable, small—See also Shop Equipment</b>	
Chanson clutch, Model B . . . . .	932
Cutter—Lovejoy milling cutter . . . . .	900
Mill—Adjustable blade hollow . . . . .	774
Mill—General purpose hollow . . . . .	774
<b>Tractors</b>	
American agricultural tractor specifications . . . . .	339
Introduces new tractor . . . . .	27
TracTractor—McCormick TracTractor passes university of Nebr. tests . . . . .	874
<b>Transmissions—See also Gears</b>	
American stock clutch specifications . . . . .	355
Brown-Lipe transmissions . . . . .	519
Muncie transmission . . . . .	447
Packard has clutch control . . . . .	92
Reo offers semi-automatic clutch . . . . .	123
Safety free wheeling . . . . .	664
Stresses—Car stresses born of free wheeling remain within normal limits . . . . .	789
Transmitter—Paterson hydraulic power . . . . .	886
<b>Truck Descriptions</b>	
Autocar lorries, big gross rating on . . . . .	198
Autocar 1½ tonner replaces Model A . . . . .	700
<b>Wheels</b>	
Clark cast wheels . . . . .	386
Wheels—Forming operations on Spok-steel wheel . . . . .	697

## Index of COMPANIES Mentioned in Automotive Industries

<b>A</b>	
Abell Drive Co.—Abell starter-drive . . . . .	163
AC Spark Plug Co.—AC Canadian plant nearly ready to open . . . . .	432
Mixture distribution and spark plug temperature . . . . .	450
Mixture distribution studied . . . . .	486
Adam Opel Works—Opel Works exports heavily . . . . .	174
The Aerocar Co. of Detroit, Inc.—Seeks new plant site . . . . .	434
Aeronautical Chamber of Commerce of Amer., Inc.—New craft designed for national air show . . . . .	399
Aetna Ball Bearing Mfg. Co.—Aetna oil seal . . . . .	642
Ainsworth Mfg. Co.—Ainsworth declares 50c special dividend . . . . .	369
Ainsworth reports assets . . . . .	500
Ainsworth reports loss . . . . .	672
Aircraft Engine & Accessory Development Corp.—Streamline design, Opposed engine fits . . . . .	455
Air Reduction Sales Co.—Aircos radiograph . . . . .	804
Allied Motor Industries—Allied Motor has loss . . . . .	669
Allied Products Corp.—Allied Products reports loss . . . . .	535
Allis-Chalmers Mfg. Co.—Allis reports profit . . . . .	236
Aluminum Co. of America—Electroplating aluminum . . . . .	98
The American Airways, Inc.—Airway cuts fares . . . . .	404
American Austin Motor Car Co.—Austin exhibits new sedan . . . . .	104
American Cable Co.—Trulay armored cable . . . . .	278
American Cable Co., Inc.—Tru-stop emergency brake . . . . .	388
American Car & Foundry Motors Co.—Jay heads a.c.f. sales . . . . .	369
American Chemical Paint Co.—Granodine, an undercoating, rustproofs . . . . .	791
American Electric Furnace Co.—New line of American furnaces . . . . .	140
American Woolen Co.—Flat fabrics for upholstery . . . . .	156
Auburn Automobile Co.—Auburn declares dividend . . . . .	432
The Auburn dual-ratio axle . . . . .	232
Auburn 8's and 12's . . . . .	42
Auburn lists more shares . . . . .	30
Auburn price announcements . . . . .	102
Auburn prices up . . . . .	531
<b>B</b>	
Backstay Welt Co.—Backstay Welt profits . . . . .	602
Bantam Ball Bearing Co.—Bantam roller bearings for generators . . . . .	644
Barber-Colman Co.—Barber-Colman bench center . . . . .	142
Limit control for hot-air furnaces . . . . .	574
Production hobbing machine . . . . .	768
Spline shaft hobbing machine . . . . .	774
Barnes Drill Co.—Barnes No. 194 hydraulic honing machine . . . . .	838
John S. Barnes Corp.—Barnes automatic lathe . . . . .	38
Bastian-Blessing Co.—Bastian dividend deferred . . . . .	500
B-B Nut Co.—B-B lock nut . . . . .	932
Bellanca Aircraft Corp.—Bellanca loses \$532,068 . . . . .	398
Bendix Aviation Corp.—Bendix earnings show increase . . . . .	436
Bendix earns \$26,364 in quarter . . . . .	362
Bendix elects Kiesrath . . . . .	600
Bendix flexible metal tubing . . . . .	197
Bendix gets tubing order . . . . .	25
Bendix meeting postponed . . . . .	168
Bendix passes dividend; plans to purchase stock . . . . .	800
Bendix profit increases . . . . .	505
Bendix reduces dividend basis . . . . .	401
Bendix Stromberg Carburetor Co.—Fuel system for motor boats . . . . .	508
Stromberg automatic choke . . . . .	265
Stromberg SF carburetor . . . . .	642
<b>Best Die Casting Corp.</b> —E. A. purchases best . . . . .	105
<b>Bijur Lubricating Corp.</b> —Bijur elects Kocher . . . . .	637
<b>Blackhawk Mfg. Co.</b> —Blackhawk names Watson . . . . .	430
<b>Boeing Airplane Co.</b> —Boeing completes contract . . . . .	601
<b>Bohn Aluminum &amp; Brass Corp.</b> —Bohnalite cylinder heads . . . . .	246
Bohn reports loss . . . . .	634
Bohn reports profit . . . . .	438
<b>Borg &amp; Beck Co.</b> —Borg & Beck shows gain . . . . .	136
Borg-Warner Corp.—Borg-Warner net reaches \$1,208,209 . . . . .	466
Borg-Warner profits . . . . .	434
Borg-Warner profits . . . . .	669
<b>Robert Bosch Co.</b> —Bosch combines Diesel governor and fuel pump . . . . .	875
<b>Bower Roller Bearing Co.</b> —Bower reports profit . . . . .	372
<b>The Brewer Electric Mfg. Co.</b> —New tornado blower . . . . .	576
<b>Briggs &amp; Stratton Corp.</b> —Adopts new engine . . . . .	30
<b>Briggs Mfg. Co.</b> —Briggs outstanding reduced . . . . .	27
Brown & Sharpe Mfg. Co.—B & S high speed milling machines . . . . .	576
Vertical spindle milling machine . . . . .	676
<b>Brown-Lipe Gear Div., Spicer Mfg. Co.</b> —Brown-Lipe transmissions . . . . .	519
<b>Bucyrus-Erie Co.</b> —Bucyrus-Erie income is less . . . . .	400
<b>The Buda Co.</b> —Buda marine Diesel . . . . .	389
<b>Edw. G. Budd Mfg. Co.</b> —Budd companies lose . . . . .	770
Deep-Drawing at Budd plant . . . . .	22
Budd names Ehle . . . . .	431
Gets railcar rights . . . . .	69
Budd names Harder . . . . .	859
Budd Mfg. reports loss . . . . .	242
Budd stamps whole Rockne side panel from single sheet . . . . .	860
<b>Budd-Micheline Rail Car Division.</b> —Budd-Micheline rail car clips 55 m.p.h. . . . .	372
<b>Budd Wheel Co.</b> —Budd Wheel declares . . . . .	929
Budd Wheel elects . . . . .	270
Budd Wheel profits . . . . .	276
<b>Buffalo Bronze Die Cast Corp.</b> —Lumen buys Buffalo Bronze . . . . .	468
<b>Buhl Aircraft Co.</b> —Buhl stockholders file petition . . . . .	895
<b>Buick Motor Car Co.</b> —Armstrong Spring absorbed by Buick . . . . .	761

Buick position gains	242	Prices of Ford commercial chassis and motor trucks	564		
Buick produces	272	Ford production	795		
<b>Buick-Olds-Pontiac Sales Co.</b> —B. O. P. Sales Co. organization set	531	Ford production begun on eights	269		
Buick, Olds and Pontiac destinies	501	Revamped Ford four may precede announcement of eight	129		
<b>Buick-Olds-Pontiac Sales Co.</b>	612	Ford rumors are blasted	247		
<b>The Bullard Co.</b> —Bullard Multi-automatic center lathes	176	Ford 65 hp. V-8	512		
Bullard type C multi-automatic	212	Ford suddenly tells of V-8, price change	238		
<b>Burgess Battery Co.</b> —Burgess aligns plant	27	Ford V-8	546		
<b>C</b>		Murray composite bodies on Lincoln	259		
<b>Cadillac Motor Car Co.</b> —H. J. Cupper resigns	602	Lincoln continues eight	85		
Cadillac names Dreystadt, Houser	667	Lincoln schedules up	102		
Reeder is Cadillac advertising manager	402	<b>Ford Motors of Canada, Ltd.</b> —Ford prices in Canada	564		
Cadillac and La Salle—silent power utilizations	10	Ford of Canada surplus declines	639		
Widman leaves Cadillac	638	<b>Ford of England</b> —Baby Ford for sale in England by May	235		
<b>Canada Carriage &amp; Body Co.</b> —Anthony hoist in Canada	237	Ford announces "midget" in England	292		
<b>Carpenter Steel Co.</b> —Carpenter patents steel	72	Ford in Europe	146		
<b>Caterpillar Tractor Co.</b> —Caterpillar reports loss	635	<b>Ford Motors of Germany</b> —German Ford omits dividend	271		
Caterpillar reports profit	205	<b>Ford Motor Co., Ltd.</b> —British 8-hp. Ford	778		
<b>Champion Spark Plug Co.</b> —Champion designs plug for wide range usage	804	<b>Ford Motor Truck Co.</b> —More power drives new Ford truck	786		
Champion shielded aircraft spark plug	644	<b>The Fostoria Pressed Steel Co.</b> —Offers new luggage carriers	470		
<b>Checker Cab Mfg. Co.</b> —Checker reports profit	570	<b>Four Wheel Drive Auto Co.</b> —F. W. D. front drive truck	446		
<b>Chevrolet Motor Car Co.</b> —Chevrolet gains	700	<b>Franklin Automobile Co.</b> —Franklin companies elect	202		
Chevrolet launches big sales push	29	Franklin gains 7 hp.	86		
Chevrolet output up	25	Franklin plans body output	138		
Chevrolet personnel changes	568	Franklin price announcements	102		
Chevrolet sales up	634	Franklin prices set	102		
Chevrolet shifts two	602	Franklin 12-cylinder car	558		
Chevrolet transmission plant is active	766	Franklin V-12	127		
<b>Chicago &amp; Northwestern &amp; Union Pacific Railroads</b> —Railroads buy Iowa Pickwick	276	<b>Freeman Quadrive Corp.</b> —Freeman reorganized	601		
<b>Chicago Pneumatic Tool Co.</b> —Hicycle continuous belt sander	139	<b>The Fuel Oil Motors Corp.</b> —Schwarz licenses Hunt	700		
<b>Chicago Yellow Cab Co.</b> —Chicago cab profits	831				
<b>Chrysler Corp.</b> —Chrysler adds line using floating power	58	<b>E</b>			
Chrysler earns 33c, gain of 28c	269	<b>Eaton Mfg. Co.</b> —Eaton reports profit	635		
Chrysler imperial prices are set	205	<b>Eclipse Aviation Corp.</b> —Offers vacuum pump	134		
Chrysler price announcements	102	<b>Electric Auto-Lite Co.</b> —Auto-Lite reports profit	433		
Chrysler ships more	67	Auto-Lite reports profit	672		
Chrysler shows gain in 1931	398	<b>The Electric Furnace Co.</b> —Nitriding for small production	390		
DeSoto adds coupe	634	<b>Electric Storage Battery Co.</b> —Battery makers report profit	435		
De Soto prices set	67	<b>Electrocon Corp.</b> —Davey vibrometer	768		
De Soto, Plymouth deliveries gain	668	<b>Ethyl Gasoline Corp.</b> —Ethyl on 5-day week	924		
<b>Cincinnati Milling Machine Co.</b> —Cincinnati No. 1 vertical miller	476	<b>Evans Appliance Co.</b> —Evans water pump	608		
Collets and shell end mill arbors	740	<b>Evans Products Co.</b> —Floor anchoring device	806		
New Cincinnati 4-position turret stop	644	Evans reports loss	374		
<b>City Auto Stamping Co.</b> —City Auto re-elects	639	<b>Ex-Cell-O Tool &amp; Aircraft Corp.</b> —Precision in boring required for silent operation	444		
<b>City Machine &amp; Tool Wks.</b> —Bevel gear rounding machine	576	Ex-Cell-O precision boring machine improved	895		
"Cimatool" grinding and boring chuck	740	Ex-Cell-O reports loss	372		
Semi-automatic Bolender burnisher	142	<b>Excelsior Tool &amp; Machine Co.</b> —Excelsior straight line bumper polisher No. 29	902		
<b>Citroen, M. Andre</b> —Citroen and the rising generation	28				
Citroen takes license for floating power	563	<b>F</b>			
<b>Clark Equipment Co.</b> —Clark cast wheels	336	<b>Fairbanks, Morse &amp; Co.</b> —Fairbanks reports loss	469		
<b>Claus, P. S.</b> —Claus Diesel engine	223	<b>Farrell-Birmingham Co., Inc.</b> —Press brake, new type	804		
<b>Clark Tractor Co.</b> —Clark Tractor	608	<b>Federal-Mogul Corp.</b> —Federal-Mogul loses	438		
<b>The Cleveland Automatic Machine Co.</b> —Six spindle bar and chucking machines	474	<b>Federal Motor Truck Co.</b> —Federal Truck adds companion line	639		
<b>Columbus Auto Parts Co.</b> —Columbus Auto has loss	634	Henry Krohn resigns	603		
<b>Commercial Investment Trust Corp.</b> —C. I. T. Corp. names two	505	Federal names Mitchell	68		
<b>Continental Aircraft Engine Co.</b> —Continental aero engine	630	Federal omits dividend	372		
<b>Continental-De Vaux Co.</b> —Papers filed for Continental-De Vaux	437	Federal reports loss	503		
De Vaux prices up, new types added	600	Federal six-wheeler	735		
Continental-De Vaux reduces price on "80"	700	<b>Federal Screw Works</b> —Federal screw reports loss	368		
De Vaux staff named	535	<b>Fellows Gear Shaper Co.</b> —Helical cutter sharpening machine	708		
<b>Continental Diamond Fibre Co.</b> —Celoron develops spoke-type gear	723	Fellows worm-type thread generator	244		
<b>Continental Motors Corp.</b> —Continental buys De Vaux-Hall name	270	<b>Fiat Co.</b> —Fiat's Balilla is Italian company's smallest auto	777		
Continental reports loss	67	Fiat "Balilla" gets good Italian reception	882		
<b>The Cooper Mfg. Co.</b> —Cooper gasket material and cut gaskets	139	<b>Firestone Tire &amp; Rubber Co.</b> —Firestone cuts prices to meet "mail orders"	829		
<b>Cord Corp.</b> —Cord income 26 Cts. a share	207	Firestone pays on preferred	734		
<b>Henry L. Cowley &amp; Co.</b> —Crolite has low coefficient of expansion	631	Firestone reports profit	30		
<b>Cummins Engine Co.</b> —Diesel motivates 14-day test	71	Harvey Firestone, Sr. takes the chair	106		
<b>Cuno Engineering Corp.</b> —Using Cuno filter	133	Canadian Firestone increases employment	130		
<b>Craveroller Co.</b> —Develops vapor "unlock"	133	<b>The Fitchburg Engineering Corp.</b> —"Fitchburg" milling machines	506		
<b>Curtiss-Wright Corp.</b> —Curtiss-Wright adds plane	435	<b>Flexible Co.</b> —City-type motor coaches	722		
Curtiss-Wright elects Damon	563	Flexible intercity coach	737		
Curtiss-Wright enters Turkey	236	<b>The Foote-Burt Co.</b> —Footburt broaching machines	36		
Curtiss-Wright reports loss	535	Footburt 5-way drilling machine	900		
<b>Cutler-Hammer, Inc.</b> —Cutler-Hammer welding timer	506	<b>Footburt</b> gear reduction unit	506		
<b>D</b>		<b>Ford Motor Co.</b> —Chicago Ford plant employing 2500	831		
<b>Dayton Rubber Mfg. Co.</b> —Dayton-Allis suit settled	504	Ford loss for '31 at 53 million	802		
<b>Defiance Spark Plug Corp.</b> —Defiance progresses	133	Ford "midgets" to England	168		
<b>E</b>		Ford output 72,000 in May in world plants	863		
<b>F</b>		Oven-length controls finishing-time in Ford plant	726		
<b>G</b>					
<b>Gairing Tool Co.</b> —Adjustable blade hollow mill		<b>The Gardner-Denver Co.</b> —Enlarged line of compressors	610		
General purpose hollow mill		<b>Gemmer Mfg. Co.</b> —Gear—New Gemmer gear for super-balloons	902		
		Gemmer reports loss	368		
		<b>General Electric Co.</b> —Phenolic laminated gears	624		
		<b>General Electric Vapor Lamp Co.</b> —Improved mercury-vapor lamp	508		
		<b>General Electric X-Ray Corp.</b> —X-Ray shows symmetry of sealed chamber valve	690		
		Insurance reports gains	399		
		<b>General Exchange Insurance Co.</b> —G. E. Insurance reports gains	399		
		<b>General Motors Corp.</b> —General Motors Corp.	467		
		G. M. arranges its biggest exhibition	505		
		G. M. boosts sales to 81,573 in April	738		
		G. M. dividend cut to 25 cents	699		
		GMC earns 17 cents in quarter	671		
		4,888,800 saw G. M. spring show	599		
		General Motors dividend is cut	201		
		G. M. holders increase	431		
		G. M. holdings of cash increase	167		
		G. M. increases share of market	465		
		G. M. organizes company in South	25		
		G. M. sales drop in February	437		
		"Motors" sales up from February	605		
		G. M. savings fund matures	205		
		G. M. savings plan suspended	767		
		General Motors Corp. summary of consolidated income	798		
		<b>General Motors Truck Co.</b> —General Motors has 3-5 trailer	736		
		G. M. offers new truck	801		
		<b>General Parts Corp.</b> —General Parts shows loss	603		
		<b>General Tire &amp; Rubber Co.</b> —Loss is shown by General Tire	398		
		General Tire passes common dividend	669		
		<b>Gisholt Machine Co.</b> —Tester, Bearing—Gisholt designs fixture for testing bearings	687		
		Gleason Works—Gleason spiral bevel gear rougher	178		
		Gleason spiral bevel pinion burnisher	178		
		<b>Goodrich Co., B. F.</b> —Develops new fan belt	437		
		Goodrich elects two	601		
		<b>Goodyear Tire &amp; Rubber Co.</b> —Goodyear-Canada	138		
		Favors 6-hour day for workers	404		
		Goodyear making rail-car tires	672		
		Goodyear reports profit	236		
		<b>Gould &amp; Eberhardt</b> —Gould & Eberhardt industrial shapers	710		
		<b>Graham-Paige Motors Corp.</b> —Cylinder block inspection at Graham-Paige	657		
		Dealers assisted by Graham	213		
		Graham designs six; similar to eight	884		
		Graham prices up	465		
		Graham production up	400		
		Graham production up	503		
		Graham reports loss	437		
		Graham reports profit	633		
		Graham ships 2537	205		
		Graham Six continues in line	19		

## INDEX—AUTOMOTIVE INDUSTRIES

**Greenfield Tap & Die Corp.**—Audet rejoins Greenfield ..... 436  
**Greenlee Bros. & Co.**—Greenlee multiple drilling set-up ..... 408  
 Greenlee multiple spindle machine, tooling for ..... 462  
**Gunite Corp.**—Gunite consolidates two ..... 276  
**Gutta Percha & Rubber Co., Ltd.**—F. A. Warren heads Canadian Co. ..... 400

**H**

**Hall Lamp Co., C. M.**—Hall Lamp loss reduced ..... 271  
**Hall Mfg. Co.**—Heavy schedules on new hone ..... 133  
**Hammond Machinery Builders, Inc.**—Hammond high-speed grinder ..... 932  
 Hammond polishing and buffing lathe ..... 506  
 Hammond polishing and buffing machine ..... 244  
**Handy Governor Corp.**—Handy Governor 610  
**Hannifin Mfg. Co.**—Hannifin air-operated arbor presses ..... 768  
 Hannifin duplex valve ..... 774  
 Hannifin valve for remote control ..... 678  
**Hayes Body Co.**—Hayes Body Co. reports loss ..... 398  
**Hayes Wheels & Forgings, Ltd.**—Hayes of Canada control passes ..... 668  
**Heald Machine Co.**—Heald No. 81 internal grinder ..... 708  
**Heil Co.**—Heil elects Falk ..... 202  
**Heintz Mfg. Co.**—Heintz elects Meinel ..... 832  
**Henry & Wright Mfg. Co.**—All-steel straight-sided press ..... 608  
 Henry & Wright presses ..... 393  
**Hercules Motors Corp.**—Hercules heavy-duty engines ..... 459  
**The Hisey-Wolf Machine Co.**—Hisey Texdrive grinder ..... 176  
 Hisey wide swing floor grinders ..... 38  
**Hudson Motor Car Co.**—Clutch control—Hudson, Essex carry Bendix clutch control ..... 734  
 Crankshaft operations at Hudson plant ..... 494  
 Essex "Standard" priced ..... 795  
 Hudson and Essex ..... 46  
 Hudson-Essex cut in Canada ..... 861  
 Hudson reports loss ..... 270  
**Hudson-Essex of Canada, Ltd.**—Hudson-Essex enters Canada with plant ..... 29  
**Hupp Motor Car Corp.**—Hupp ..... 2  
 Hupp entered at Indianapolis ..... 606  
 Hupp keeps 1931 lines ..... 26  
 Hupp reports loss ..... 465  
 Hupp reports loss ..... 667  
 Hupp ships 1049 ..... 204

**I**

**Illinois Iron & Bolt Co.**—Chanson clutch Model B ..... 932  
**Indiana Motors Corp.**—White to sell an Indiana line ..... 207  
**Indiana Truck Corp.**—Indiana sells Marion plant ..... 135  
**Indian Motor Cycle Co.**—Dispatch-tow prices down ..... 602  
 Indian Motocycle cuts 1930 loss ..... 275  
 Indian plans campaign ..... 634  
 Indian plans new type ..... 68  
**International Harvester Co.**—International Harvester adds 3 models ..... 173  
 I. H. C. declared dividend ..... 669  
 I. H. C. elects ..... 930  
**Trac-Tractor**—McCormick Trac-Tractor passes University of Nebr. tests ..... 874  
**The International Nickel Co. of Canada, Ltd.**—Nickel alloys and plating ..... 255  
**International Nickel Co., Inc.**—Nickel tubing resists fatigue ..... 164  
**International Safety Lock Nut Corp.**—Dalwa self-locking wheel nut ..... 506

**J**

**Jaeger Watch Co.**—Clock combined with rear-view mirror ..... 508  
**S. C. Johnson & Son, Inc.**—Johnson firm incorporates ..... 274  
**Johnson Motor Co.**—Johnson assets reported ..... 202  
**Jones & Lamson Machine Co.**—Axe turning with Fay lathe ..... 556

**K**

**Kades Motor Parts Co.**—Kades organization files ..... 435  
**Kearney & Trecker Corp.**—Knee type milling machines ..... 676  
 Milwaukee-Mil rotary-type miller ..... 772  
**The Kellogg Mfg. Co., Ltd.**—Kellogg leases Canadian plant ..... 236  
**Kelsey-Hayes Wheel Corp.**—Kelsey-Hayes reports loss ..... 538  
 Kelsey fused, weldless brake drum ..... 194  
**Kellet Aircraft Corp.**—Kellet detachable hood for autogiro ..... 253  
**Kellett Autogiro Corp.**—Kellett solves autogiro structural problems, etc. .... 808

**Kingsbury Machine Tool Corp.**—Kingsbury drilling and tapping machines ..... 262  
**The Kinner Airplane & Motor Corp., Ltd.**—Kinner R-5 engine ..... 273  
**Kissel Motor Car Co.**—Kissel plant to be used ..... 27  
**The Kron Co.**—The new Kron scale ..... 768

**L**

**Leon Laisne Co.**—Leon Laisne chassis ..... 860  
**Landis Machine Co.**—Landis 1 1/4 in. pipe and nipple threading machine ..... 574  
**Landis Tool Co.**—10 in. x 24 in. Landis Universal grinder ..... 440  
 Landis tool and cutter grinder ..... 176  
**Landis Machine Co., Inc.**—Landis rotary die head ..... 708  
 Stud making attachment for Landis machine ..... 476  
**Langelier Mfg. Co.**—Langelier forming machine ..... 838  
 Langelier swaging machine with hydraulic feed ..... 934  
**Layth-Grindar Corp.**—Layth-Grindar attachment for lathes ..... 36  
**R. K. LeBlond Machine Tool Co.**—Ultra Hi-Speed production lathe ..... 710  
**Le Roi Co.**—Builds large power unit ..... 29  
**L. G. S. Devices Corp.**—L. G. S. on 24-hr. schedule ..... 27  
**Libbey-Owens-Ford Glass Co.**—Libbey-Owens reports loss ..... 502  
 Libbey reports profit ..... 601  
**Lincoln Electric Co.**—New automatic welding head ..... 574  
 Lincoln "power saver" electrode holder stand ..... 836  
**Linde Air Products Co.**—Cromaloy flux ..... 644  
 New bronze welding rod ..... 610  
 New Oxweld welding heads ..... 508  
 New Purox regulators ..... 476  
 P-O-L primer ..... 246  
**Link-Belt Co.**—Link-Belt elects Torrence 503  
**The Long Mfg. Co.**—Long producing heating unit ..... 370  
**Lovejoy Tool Co.**—Lovejoy milling cutter ..... 900  
**Lucas Machine Tool Co.**—Lucas 40 series boring, drilling and milling machine ..... 574  
**The Lufkin Rule Co.**—Lufkin announces "Crescent Junior" ..... 440  
**Lycoming Mfg. Co.**—Lycoming adds engine ..... 471  
 Lycoming 8-cyl. truck engine ..... 463  
 Lycoming orders up ..... 69  
 Lycoming reports income ..... 499

**M**

**McCord Radiator & Mfg. Co.**—McCord to exchange ..... 25  
 McCord reports loss ..... 438  
**McCord Mfg. Co.**—McCord exchange approved ..... 136  
**McQuay-Norris Mfg. Co.**—McQuay-Norris Co. builds in Canada ..... 398  
 McQuay profits up ..... 472

**M**

**Mack Trucks, Inc.**—Mack declared dividend ..... 434  
 Mack trucks declares 25c quarterly dividend ..... 863  
**Madison-Kipp Corp.**—Madison-Kipp mirror air grinder ..... 442  
**Mallory Electric Corp.**—Mallory combines vacuum and speed control of spark ..... 885  
**Manhattan Insulated Wire Co.**—Offers replacement coils ..... 861  
**Marlin Rockwell Corp.**—Marlin Rockwell reports loss ..... 436  
**Marmon Motor Car Co.**—Marmon 8-125 ..... 88  
 Marmon to list additional stock ..... 895  
**Martin, James V.**—Martin rear-engined car ..... 256  
**Massey-Harris Co.**—Massey-Harris aids its creditors, cuts prices ..... 635  
**Matthews Conveyor Co.**—Matthews conveyor uses own device ..... 644  
**Metal & Thermit Corp.**—Mineral coated welding electrodes ..... 244  
**Metal Stamping Co., The**—Chassis dynamometer installed ..... 634  
**Michelin Tire Co.**—Asks for dissolution ..... 367  
**Michigan Tool Co.**—Michigan gear finishing machine ..... 642  
**Micromatic Hone Corp., The**—New improved 3-finger automatic micromatic hone ..... 246  
**Midland Steel Products Co.**—Steeldraulic brakes have European outlet ..... 271  
**Milburn Co., The Alexander**—Milburn type HMS welding torch ..... 608  
**Milholland Corp.**—Milholland Brinell test 772  
 Two machines for clutch plates ..... 406  
**Minneapolis-Moline Power Implement Co.**—Moline anticipates loss ..... 135  
 Introduces new tractor ..... 27  
**Modine Mfg. Co.**—Modine dividend cut 602  
**Montreal Aircraft Industries, Ltd.**—Montreal Aircraft buys Curtiss-Reid ..... 863

**N**

**Nash Motors**—Nash arrives at show announcing McCarty as president ..... 104  
 Nash earns 7 cts. per share ..... 602  
 Five Nash lines list from \$777 ..... 367  
 McCarty heads Nash executive group ..... 414  
 Nash models ..... 380  
 Nash reports orders gain ..... 500  
**National Automatic Tool Co.**—Natco hydraulic driller ..... 210  
 National vertical hydraulic drill ..... 934  
**National Carbon Co., Inc.**—Corrosion of radiators ..... 457  
**National Mach. Prod. Co.**—Braketite nuts ..... 838  
**National Machinery Co.**—National automatic electric header ..... 836  
**National Supply Co., The**—National Supply reports loss ..... 502  
**New England Auto Products Corp.**—Ball bearing universal joint ..... 485  
**New Jersey Zinc Co.**—Chromium plating on zinc alloys ..... 528  
**Noblitt- Sparks Industries, Inc.**—Noblitt- Sparks muffler is used on Rockne 75 ..... 232  
 Noblitt passes dividend ..... 437  
**North American Aviation, Inc.**—Reduces share value ..... 472  
**Norton Co.**—New type 40 lapping machine ..... 36  
 Stainless steel polishing ..... 595  
 Norton wage plan ..... 190  
**Norwalk Tire & Rubber Co.**—Norwalk Tire on board ..... 398  
**N. W. Sales Co.**—G. M. sets up new sales company ..... 167

**O**

**Oakland Motor Car Co.**—Heads Pontiac parts, service ..... 434  
 Pontiacs, two carry on for 1932—dropped Oaklands ..... 62  
 Oakland personnel changes ..... 534  
**Oilgear Co., The**—Oilgear cyclematic vertical broaching machine ..... 140  
 Oilgear sideplate vertical presses ..... 139  
**O. K. Tool Co., The**—Line of square toll bits ..... 442  
 New solid shank expansion reamer ..... 246  
 New Stellite cutters ..... 442  
**Olds Motor Works**—Buick-Olds changes ..... 562  
 Eddins elected Olds president ..... 397  
 Olds employment up ..... 27  
 Olds six and eight ..... 6  
**Tinius Olsen Testing Machine Co.**—Olsen hydraulic type testing machine ..... 210  
**Outboard Motors Corp., The**—Outboard builds bicycle engine ..... 369  
 Motor lawn-mower ..... 806  
 Outboard reports loss ..... 72  
**Owens-Illinois Glass Co.**—Owens-Illinois "Dunstop" air filter ..... 142

**P**

**Paasche Airbrush Co.**—Paasche type U B U multiplehead air brush ..... 140  
**Packard Electric Co.**—Packard Electric sale ..... 562  
**Packard Motor Car Co.**—Packard has clutch control ..... 92  
 Packard holders to vote ..... 569  
 Packard prices touch \$1750 ..... 103  
 Packard prices up ..... 893  
 Packard reports loss ..... 531  
 Packard ships 2145 ..... 599  
 Packard transfer approved ..... 633  
 Packard twin-six and light eight ..... 54  
**Page Steel & Wire Co.**—Page hi-tensile electrodes ..... 610

**P**  
 Parker Rust Proof Co.—Parker reports profit ..... 668  
 Peerless Motor Car Co.—Peerless elects Davis ..... 431  
 Peerless reports loss ..... 208  
 Peerless reports loss ..... 604  
 Perfect Circle Co.—Plans Canadian plant 602  
 Pierce-Arrow Motor Car Co.—Pierce prices announced ..... 102  
 Pierce-Arrow prices revised upward ..... 600  
 P-A reports loss ..... 432  
 Pierce Governor Co.—Pierce electro-vac engine governor ..... 221  
 Pittsburgh Steel Co., The—Absorbs its subsidiaries ..... 567  
 Plymouth Motor Corp.—Offers \$25,000 for 50 words ..... 830  
 Plymouth transmission improvements ..... 516  
 Polk & Co., R. L.—Polk see April sales at 111,000 ..... 796  
 Pratt & Whitney Co.—P. & W. electro-limit gage for "continuous inspection" ..... 440  
 Pratt & Whitney Aircraft Co.—New P. & W engines ..... 606  
 Fuel-injection—Pratt & Whitney adapts fuel-injection to Hornet engine ..... 698  
 Head resistance is decreased in Pratt & Whitney Twin Wasp ..... 814  
 Heavy duty hydraulic vertical grinder 442  
 Townend licenses available for U. S. 500

**R**  
 Rawplug Co., Inc.—Lock washers and cap 900  
 Raybestos-Manhattan, Inc.—Raybestos reports income ..... 499  
 Raybestos shows \$553,992 net ..... 374  
 Reo Motor Car Co.—Reo announces 1½-ton speedwagon ..... 735  
 Reo elects Foster ..... 640  
 Reo offers semi-automatic clutch ..... 123  
 Reo turns Canadian mfg. and sales over to Dominion Motors ..... 241  
 Rockford Drilling Machine Co.—New Rockford automatic ..... 278  
 Rockford Machine Tool Co.—Rockford economy lathe ..... 934  
 Rolls-Royce of Amer., Inc.—Asks receiver for Rolls-Royce ..... 69  
 Rolls-Royce receivership denied ..... 370  
 Rolls-Royce, Ltd.—Bentley joins Rolls-Royce ..... 734  
 Rolls-Royce has 1931 net profit ..... 570  
 Ross Gear & Tool Co.—Ross reports profit 242  
 Rushmore Co., S. W.—Rushmore steam-cooling system ..... 587  
 Russell Motor Car Co.—Russell Motor declares ..... 72  
 Ryan Mfg. Corp.—Allis buys Ryan Mfg. Co. ..... 130

**S**  
 Safety Auto Starter Co., The—Making new starter drive ..... 135  
 Safety Free Wheeling Co.—Safety free wheeling ..... 664  
 Salisbury Axle Co.—Salisbury new rear axle ..... 233  
 Scherr Co., Inc., Geo.—Zeiss universal-gear testing machine ..... 476  
 Schrader's Son, A.—Vibration records of machine tools ..... 395  
 Schluemannsche Industrie-und Handelsgesellschaft m.b.H.—Schliha two-cycle engine develops 36 hp. at 3200 r.p.m. 887  
 Schwarz Cycle Engine Corp.—Schwarz-cycle engine ..... 121  
 Seagrave Corp.—Seagrave reports loss ..... 670  
 Seaman Body Corp.—Seaman recalls workers ..... 470  
 Seneca Falls Machine Co.—Seneca Falls makes new contribution to fast production ..... 876  
 "K" Lo-swing lathe ..... 408

**Southeastern Sales Co., The—G. M.**  
 Southeastern Sales Co. merged ..... 603  
**Sparton of Canada, Ltd.**—Sparton appoints Holmes ..... 639  
**S. P. A. Truck Corp.**—Pierce-Arrow medium duty truck ..... 491  
 Studebaker truck reduced ..... 567  
**S. P. A. R. Sales Co.**—Non-vehicle merchandising, S. P. A. R. unites Studebaker's ..... 114  
 New sales unit for Studebaker ..... 761  
**Stackbin Corp.**—Stackbin machine tender 574  
**Standard Gage Co.**—Acro-lite gage ..... 442  
**Standard Steel & Bearings, Inc.**—Standard ball bearing oil retainer ..... 596  
**Star Motor Co., Ltd. (England)**—British Star Co. fails ..... 433  
**Steel City Testing Laboratory**—Steel City testing machine ..... 900  
**Steere Co., F. W.**—Gets autogiro license 207  
**Sterling Engine Co.**—S.A.E. names W. E. John ..... 639  
**Sterling Motor Truck Co.**—Sterling reports loss ..... 170  
**Stewart-Warner Corp.**—Stewart-Warner reelects ..... 602  
 Stewart-Warner reports loss ..... 172  
 Stewart-Warner reports loss ..... 270  
**Stinson Aircraft Corp.**—Stinson cuts price on 4-pass. type ..... 72  
 Stinson lets \$2,500,000 in orders ..... 26  
**Stolper Steel Products Corp.**—Enters replacement field ..... 796  
**Stutz Motor Car Co. of America, Inc.**  
 Stutz prepares 1933 line ..... 834  
 Stutz prices reduced on 3 lines ..... 19  
**Studebaker Distributors, Ltd.**—Rockne may enter U. K. ..... 168  
**Studebaker Corp.**—Studebaker earns 20c per share ..... 438  
 Studebaker employs 9000 ..... 30  
 Studebaker omits common dividend ..... 667  
 Studebaker truck ..... 20  
**Studebaker Sales Corp.**—Studebaker sets up bonus for salesmen ..... 173  
**Studebaker Pierce-Arrow Export Corp.**  
 S. P. A. export promotes Spencer ..... 271  
 Studebaker exports up ..... 437  
**Sundstrand Machine Tool Co.**—Sundstrand brake drum splitting machine 280  
 Sundstrand Junior stub lathe ..... 678  
**Surface Combustion Co.**—Improved gas-fired forge furnace ..... 474

**T**  
**Titeflex Metal Hose Co.**—Titeflex all-metal exhaust tubing ..... 610  
 Titeflex all-metal lines ..... 608  
**Timken Detroit Axle Co.**—Timken axle reports ..... 669  
**Timken Roller Bearing Co.**—Timken wear and lubricant tester ..... 740  
**Tips, Inc.**—Standard cutting and welding torch ..... 678  
**Toledo Precision Devices, Inc.**—Gage for connecting rods ..... 278  
 Toledo torque dynamometer ..... 710  
**Torchweld Equipment Co.**—Torchweld welding torches ..... 246  
**Trico Products Corp.**—Trico earns \$4.70 ..... 374  
**Triplex Safety Glass Co.**—Triplex sale approved ..... 134  
**Twin Coach Company**—Twin Coach reports profit ..... 502

**U**  
**Uehling Instrument Co.**—Thermo-Tel electric temperature signal ..... 902  
**Udylite Process Co.**—Berry now heads Udylite advertising ..... 399

**Union Carbide & Carbon Corp.**—Grease—Finds soluble greases clog radiators 921  
**Unit Corp. of America**—Unit Corp. to re-organize ..... 402  
**United Aircraft & Transport Corp.**—United Aircraft has profit ..... 502  
**United Air Lines**—United plans big planes ..... 795  
**United American Bosch Corp.**—Bosch automobile radio ..... 212  
 American-Bosch coil ..... 26  
 Bosch Ignition magneto ..... 280  
**The United States Asbestos Division of Raybestos-Manhattan, Inc.**—New Greylock Eagle brake lining ..... 408  
**United States Rubber Co.**—U. S. Rubber forms company ..... 504

**V**  
**Vanadium Corp. of America**—Chrome vanadium bar specifications revised 227  
**Van Sicklen Corp.**—Van Sicklen resigns 436  
**Vauxhall Motors, Ltd.**—Vauxhall reports profit ..... 570  
 Vauxhall shows profit ..... 570  
**Vickers, Inc.**—Vickers 4-way balanced valves ..... 576

**W**  
**Walter Motor Truck Co.**—Walter organizes Canadian company ..... 130  
**Ward-La France Truck Corp.**—Duralumin used widely on trucks ..... 631  
**Warner Aircraft Corp.**—Warner Aircraft loss ..... 535  
**Warner & Swasey Co.**—Warner & Swasey No. 3 universal turret lathe, new ..... 139  
**Warner Elec. Brake Corp.**—Warner electric brakes mounted on tractor-trailer train ..... 883  
**Warner Electric Mfg. Co.**—Canadian Sangamo production begun ..... 275  
**Waukesha Motor Co.**—Asks receivership 374  
 Waukesha introduces new engine series 929  
 Waukesha 6-cyl. Diesel ..... 125  
**Westinghouse Elec. & Mfg. Co.**—Electric motor maintenance ..... 96  
**White Co.**—White to market 1½-ton Indiana ..... 600  
 White to sell an Indiana line ..... 207  
**Wilcox-Rich Corp.**—Wilcox-Rich net is down ..... 401  
**Wilson Co., H. A.**—Rhodium plating process offered ..... 131  
**Willys-Overland, Inc.**—Willys-Overland commercial line ..... 590  
 Heavy charges boost loss to \$14,000,000 469  
 Overland group seeks U. S. aid ..... 465  
 Willys may get control ..... 465  
 Willys prices higher on much revised cars ..... 917  
 Willys prices reduced ..... 130  
 Willys prices to stick ..... 569  
 Willys reports loss ..... 436  
 Willys, three lines listed under \$900 ..... 50  
**Worthington Pump & Machinery Corp.**—Worthington reports loss ..... 435

**Y**  
**Young Spring & Wire Corp., L. A.**—L. A. Young reports profit ..... 436

**Z**  
**Zenith Mfg. Corp.**—Court names receiver ..... 240

## Index of AUTHORS Contributing to Automotive Industries

<b>A</b>	<b>B</b>	<b>C</b>
Ainsworth, Marcus—Dealer car registrations ..... 222	Blanchard, Don—"Backward" engineering might solve 1932 sales riddle ..... 806	Carver, Walter L.—Soviet plants lead vehicle plans at Amo and Nizhni-Novgorod ..... 418
Anderson, E. A.—Chromium plating on zinc alloys ..... 528	Nash models ..... 380	Soviet Russia ..... 375
Ayres, Leonard P.—Business is better. 443	Second-half headaches ..... 871	Chase, Herbert—Martin rear-engined car 256
<b>D</b>	Brewer, R. W. A.—Streamline design, opposed engine fits ..... 455	Cottrell, James W.—Ford 65 hp. V-8 ..... 512
Denham, Athel F.—Auburn 8's and 12's ..... 42	S.A.E. truck rating solution is due ..... 855	S.A.E. truck rating solution is due ..... 855
Elimination of cowl probable, says Ralph Roberts, Briggs designer ..... 224	Triple muddle stalls truck raters ..... 913	Triple muddle stalls truck raters ..... 913
Machine tool makers as consultants to the industry ..... 410	Crofoot, A. Burdet—New taxes on motor vehicles proposed in various states ..... 257	Willys is back ..... 615
Plymouth transmission improvements ..... 516		
Trusses stiffen Hupp frame, tying it to body members ..... 2		
<b>G</b>		
Geschelin, Joseph—Body sheet metal production ..... 496		
Chromium finish, durable bright ..... 481		
Chromium plating cutting tools multiplies wear-life ..... 748		
Citroen production shows sway of U. S. tool designing, etc. ..... 714		
Diesel myths ..... 577		
Diesels should be designed and evaluated for specific problems, automotive 619		
Ductility and corrosion in welding up at A.W.S. meeting ..... 688		
Flat fabrics for upholstery ..... 156		
Foremen in factories is an expensive pastime ..... 622		
Kellett solves autogiro structural problems, etc. ..... 808		
Kingsbury drilling and tapping machines ..... 262		
Maintenance practice, standards for ..... 150		
Non-productive workers share in Norton wage plan ..... 190		
Pearl essence finish for bodies ..... 384		
Rhythm found key to production economies through motion study ..... 914		
SKF budget control ..... 648		
<b>H</b>		
Heldt, P. M.—Calculation of weight transfer on tractor-trailer trains ..... 852		
Car design, developments in ..... 80		
Diesel—French Diesel operator shows 8 to 15% savings ..... 918		
Flexible engine mountings ..... 184		
Ford, V-8 ..... 546		
Ford's V-8 and Model B ..... 582		
Inspection—Rigid inspection of tools & product assures accuracy in gear production ..... 682		
Muncie transmission ..... 447		
PV factor is NOT proper measure of bearing capacity ..... 842		
Passenger car, engine power increase in ..... 229		
Pump characteristics affect Diesel engine torque ..... 780		
Research solves poor machinability problems at Muncie Prod. Div. ..... 820		
Stratospheres, Flying in the ..... 250		
Strength increased when gears are designed, etc. ..... 744		
Hornung, Andrew—Diesels with precombustion chamber ..... 662		
Hosking, Herbert T.—Ford rumors are blasted ..... 247		
Speed—Administrators ask less talk of speed ..... 718		
Hunt, J. V.—Electro-motor maintenance ..... 96		
<b>I</b>		
Isom, Langley W.—Machine for laboratory tests of brake lining ..... 120		
<b>K</b>		
Khan, Mohamed Ally—India, motor buses in ..... 124		
Kalmar, Stephen—Mixture distribution and spark plug temperature ..... 450		
Mixture distribution studied ..... 486		
<b>L</b>		
Lapelle, R. R.—Nitriding for small production ..... 390		
<b>M</b>		
Mahle, Ernst—Piston materials, Tests of ..... 523		
Pistons and materials, Tests on ..... 552		
Mansur, C. W.—Phenolic laminated gears 624		
Moffett, L. W.—Car tax snare drawn tighter ..... 531		
Excise-tax overload, shun the ..... 111		
Industry to pay one-fourth of total Federal tax levies ..... 857		
Motor restriction as railroad aid, A. P. I. hits ..... 266		
Tax legislation—Topsy-turvy tax legislation hits industry ..... 741		
Treasury explains how taxes fall ..... 923		
Musselman, C. A.—Banish gloom; progress is ahead ..... 611		
<b>N</b>		
Peat, Leslie—Car makers approve radios, providing for antennas ..... 812		
"Doughnut" nightmares haunt engineers at summer session ..... 903		
One dealer—multiple lines; that's how tide runs now ..... 679		
<b>P</b>		
Nealey, J. B.—Bonderizing Ford steel parts ..... 592		
<b>R</b>		
Rabezzana, Hector—Mixture distribution and spark plug temperature ..... 450		
Mixture distribution studied ..... 486		
Reinhard, C. E.—Chromium plating on zinc alloys ..... 528		
Reeves, Alfred—Welcome world (Preliminary facts and figures) ..... 39		
Richardson, H. M.—Phenolic laminated gears ..... 624		
Roos, D. G.—Let engineering rule the roars at Indpls. speedway classic ..... 339		
<b>S</b>		
Shidle, Norman G.—The calendar is our best friend ..... 1		
Car prices shimmy; solid floor needed 543		
Deep conflicts stir engineers at Detroit with visitors scoring ..... 179		
"Doughnut" nightmares haunt engineers at summer session ..... 903		
Four car makers still continue dividends 711		
McCarty heads Nash executive group 414		
New York show ..... 77		
Non-Vehicle merchandising, S. P. A. R. unites Studebaker's ..... 114		
Sales meetings for dealers ..... 509		
State gas-tax tolls mount; confiscation-point imminent ..... 645		
The little giant ..... 775		
Stanley, Robert C.—Nickel alloys and plating ..... 255		
Sutton, E. S.—Streamline design adaptable to conventional car chassis ..... 856		
Symington, Harry—Rubber market conditons ..... 477		
<b>T</b>		
Toboldt, W. K.—Reo 6-cyl. Flying Cloud ..... 588		
"Stock" cars expected to push fast field in Indpls. race ..... 746		
"Stock" cars grab brilliant places at Indpls. ..... 816		
<b>W</b>		
Wells, John E.—Precision in boring required for silent operation ..... 444		
Wilson, William H.—Corrosion of radiators ..... 457		
Worthington, Robert—Nickel tubing resists fatigue ..... 164		

## Index of Associations Mentioned in Automotive Industries

<b>Aeronautical Chamber of Commerce</b> A. C. C. elects Lawrence ..... 206	<b>International Standards Assn.</b> —World engineers meet on standards ..... 828
<b>American Automobile Assn.</b> AAA Club elects Page ..... 830	<b>Interstate Commerce Commission</b> —Moves to restrict rail "service" ..... 923
Contest board elected ..... 101	<b>Michigan Automotive Trade Assn.</b> —O'Dea heads M. A. T. A. for year ..... 368
<b>American Society for Testing Materials</b> —Petroleum products and lubricants, methods of test ..... 232	<b>Motor &amp; Equipment Assn.</b> Equipment Associations map plans for tax collection ..... 896
<b>Automobile Club of America</b> —Automobile Club of America (N. Y.) dissolves ..... 170	Equipment sales rise in November ..... 30
<b>American Gear Manufacturers Assn.</b> Gear design—Strength increased when gears are designed, etc. ..... 744	M. E. A. protests tax ..... 134
<b>American Petroleum Institute</b> —Motor restriction as railroad aid, A. P. I. hits 266	<b>Motor Equipment Manufacturers Assn.</b> M. E. M. A. protests tax ..... 134
<b>American Road Builders' Assoc.</b> —Road builders show; MacDonald gets award. 103	M. E. M. A. shifts credit set-up ..... 705
<b>American Society of Tool Engineers</b> Tool engineers form society ..... 466	<b>National Automobile Chamber of Commerce</b> Honors for Reeves and Pyke Johnson 101
<b>American Welding Society</b> —Ductility and corrosion in welding up at A.W.S. meeting ..... 688	Motor heads will elect ..... 829
<b>Asbestos Brake Lining Assn.</b> —Adds to membership ..... 134	N. A. C. C. reelects Alvan Macauley ..... 892
<b>Feuilleton Nationale de l'Automobile, du Cycle, de l'Aeronautique et des Transports</b> —French trade bodies merge ..... 204	N. A. C. C. resigns its membership in Bureau Permanent in Paris ..... 705
	Tax presentation program set ..... 599
	Traffic managers consider rates ..... 633
	<b>National Automobile Dealers Assn.</b> N. A. D. A. curtails many activities ..... 834
	<b>National Automotive Parts Association</b> Equipment Associations map plans for tax collections ..... 896

